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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,784

01/21/2005

Peter Bassler

264868US0PCT

1967

22850

7590

04/17/2008

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

MANOHARAN, VIRGINIA

ART UNIT

PAPER NUMBER

1797

NOTIFICATION DATE

DELIVERY MODE

04/17/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/521,784	Applicant(s) BASSLER ET AL.	
	Examiner Virginia Manoharan	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/05/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors, e.g., typographical, grammar, idiomatic, syntax and etc. Applicants' cooperations are requested in correcting any errors of which applicants may become aware in the specification.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "2" and "5" have both been used to designate enrichment section. See page 6, line 12 and page 6, line 18 respectively.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a). Claim 12 appears to be already covered in claim 11, claimed twice?
- b). There are insufficient proper antecedent basis for the following limitations in the claims.
 - 1). "the methoxypropanols as azeotrope with water", claims 11 & 29- 30;
 - 2). "the solvent mixture", claims 11 & 29-30;
 - 3). "the column downstream", and "the feed column", claims 19-20.
- c). The claims or at least part of the claims are recited in passive rather than active steps, e.g., the recitation of "by distillation" and "by reaction of a hydroperoxide with propylene" in claim 11, line 1 and lines 2-3 respectively. See also claims 29- 30.
- d). The thermally coupled columns recited in claims 17-18 are at odd or at least broadening the "dividing wall column" initially recited in claim 11, the claim from which they depend. See also claim 30. Also, claims 19-20 appears to be at odd with claim 11 wherein the separation occurs at the dividing column as opposed to the downstream column.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re*

Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 11-30 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11-30 of copending Application No. 10/516,939. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter of the instant claim is covered in the claims of the above application and vice versa.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 11-30 are provisionally rejected on the ground of nonstatutory double patenting over claims 11-30 of copending Application No. 10/516,939. This is a provisional double patenting rejection since the conflicting claims have not yet been patented. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: “a continuously operated process for the purification by distillation of the methanol used as solvent in the synthesis of propylene oxide by reaction of a hydroperoxide with propylene, with the

methoxypropanols as azeotrope with water and the low boilers and high boilers simultaneously being separated off, wherein the solvent mixture obtained in the synthesis is fractionated in a dividing wall column”.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' Disclosure of Admitted Prior art as illustrated e.g., by WO00/07965 in view of Rust (6,958,111) or Lestak et al “HEAT TRANSFER ACROSS THE WALL OF DIVIDING WALL COLUMNS” publication (July 1994) .

Applicants admit at page 1, lines 25-40 thru page 2, lines 1-23 that "the multistage process described in WO 00/07965 provides for the reaction of the organic compound with a hydroperoxide to comprise at least the steps (i) to (iii): (i) reaction of the hydroperoxide with the organic compound to give a product mixture comprising the reacted organic compound and unreacted hydroperoxide,

(ii) separation of the unreacted hydroperoxide from the mixture resulting from step (i),

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(iii) reaction of the hydroperoxide which has been separated off in step (ii) with the organic compound. Accordingly, the reaction of the organic compound with the hydroperoxide takes place in at least two steps (i) and (iii), with the hydroperoxide separated off in step (ii) being reused in the reaction.

Applicants further admit at page 2, lines 1-23 "This reaction sequence is preferably carried out in a solvent and the hydroperoxide used is preferably hydrogen peroxide. The particularly preferred solvent is methanol.Here, the hydrogen peroxide conversion in step (i) is from about 85% to 90% and that in step (iii) is about 95% based on step (ii).

Over both steps, the total hydrogen peroxide conversion is about 99% at a propylene oxide selectivity of about 94-95%.

Owing to the high selectivity of the reaction, this process is also referred to as the coproduct-free synthesis of propylene oxide.The propylene oxide has to be separated off from a mixture comprising methanol as solvent, water, hydrogen peroxide as hydroperoxide and also by-products. By-products are, for example, the methoxypropanols, viz. 1-methoxy-2-propanol and 2-methoxy-1-propanol, which are formed by reaction of propylene oxide with methanol. Propylene glycols, hydroperoxypropanols, acetaldehydes and methyl formate are also present in the mixture.

Methoxypropanols can be used, for example, as solvents in surface coating systems. In the work-up, they are obtained in a stream comprising the methoxypropanols together with methanol, water and propylene glycol. The separation processes carried out for recovering these materials of value have hitherto typically been carried out in distillation columns having a side offtake or in columns connected in series. This procedure is costly because it has an increased energy requirement". [Compare e.g., with claims 11 and 26- 27].

The process admitted to be known by applicants differs from the claimed invention in that claim 11, for example recites "wherein the solvent mixture obtained in the synthesis is separated in a dividing wall column".

However, said difference does not constitute a patentable distinction inasmuch as it is well- documented in the art that for the fractionation of some multicomponent mixtures the use of a dividing wall column is found to be advantageous. To replace the conventional column used in the purification of methanol, admitted to be known by applicants, with a dividing wall column, in order to arrive at the claimed invention, would have been obvious to one of ordinary skill in the art so as to achieve the predictable result of obtaining the

advantages that can be derived in terms of energy consumption and capital costs as taught by Rust, noting e.g., col. 1, lines 1-61. See also Lestak et al publication at page 639 suggesting that a dividing wall column can save typically 30% of the energy costs when compared with conventional distillation column arrangements.

Claims 13- 14 directed to the numbers of theoretical plates and claims 15-16 directed to temperatures are deemed to be result-effective -variables which ordinarily are within the skilled of the art.

Claim 19-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 29- 30 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a). Teles et al discloses a process for producing propylene oxide.
- b). Gobbel et al discloses the separation of propylene oxide from a mixture containing the same and methanol.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to V. Manoharan whose telephone number is (571) 272-1450.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Virginia Manoharan/
Primary Examiner, Art Unit 1797